



الشركة السعودية للكهرباء  
Saudi Electricity Company  
طاقة مثمرة

# *ISOLATED GENERATION PROCEDURES (IPG)*

Saudi Electricity Company – Distribution

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## **1. INTRODUCTION**

This manual (IPG) is created to provides general guidelines intended for consolidation of procedures for generation within SEC Operating and Planned Distribution Networks through Isolated Generation Division - DBU as for long term, summer support, operation and maintenance of SEC portable Diesel Units and including rental generation.

### **1.1. HOW TO USE THE NEW PROCEDURE MANUAL**

Information in this manual is presented in a top-down approach along the major steps of the workflow steps; a high-level description of major tasks are presented as an introduction and quick reference, followed by detailed procedures and guidelines. The appendix provides a compilation of the most recent versions of main documents and forms related to the Isolated Generation.

## **2. QUALIFYING & REQUALIFYING CONTRACTORS**

It is important that SEC staff & their contractors carries out work with appropriate care, attention and adherence to correct practice and procedures to ensure the continuity of power supply.

In order to qualify Contractors to perform General Services Contract a study and assessment shall be rendered to evaluate its capabilities and potential to ensure that Contractor comply with the financial, commercial, technical requirements and complying to Saudi Electricity Company (SEC) specifications.

The goal for both requirement is to achieve beyond expectations of Contractor performance for continuous uninterrupted supply of electric energy to SEC customers through power purchase agreement Contracts (long / short term), operation & maintenance of SEC portable diesel units.

Contractors registered with SEC and from Distribution Engineering Department approved list shall poses and to submit the following official valid documents, certificates and licenses but not limited to:

### **2.1. GENERAL REQUIREMENTS:**

In order to qualify contractors to perform General Services, Contractors shall registered with SEC and obtained Vendor number and to submit to Contracting Department the following documents but not limited to:

- Commercial Registration
- Classification Certificate.
- Chamber of Commerce Certificate.
- Certificate of Zakat and Income.
- Social Insurance Certificate.
- Certificate from Labor Office attesting to adherence of Contractor to official Saudization percentage.
- License in Contractor name of Electricity & Co-Generation Regulatory Authority (ECRA) to conduct electricity generation activity.
- Contractor to obtains all permits, licenses and other governmental, municipality or other authorization which must be in Contractor's name.

All the above documents shall be official valid documents, certificates & liceneses. For further information, refer to below link:

[https://www.se.com.sa/ar-sa/business/Pages/GENERAL\\_PQ.aspx](https://www.se.com.sa/ar-sa/business/Pages/GENERAL_PQ.aspx)



## 2.2. SPECIFIC REQUIREMENT

2.2.1 After the contractor obtained the Vendor number. Contractor shall prepare & submit the following to concern sector:

- Key personnel, field personnel to include but not limited to technical manager, technical engineers, safety site engineer, security guards, technical manpower and operators attach with their Resumes for review & shall be approved by SEC.
- Contractor shall submit complete list of equipment, electrical and mechanical tools, certified electrical and mechanical calibration & test equipment owned by the Contractor to be used to perform the work required.
- All equipment and tools shall be in first-class operating condition and subject to inspection from time to time by SEC, any equipment and tools which is rejected as not conforming with the foregoing shall be removed from the work site by Contractor and to replace.
- All equipment's & material shall be approved by SEC and all Technical Data Schedule shall be stamped by manufacturer and providing with equipment details, specifications, derating factors and other technical information & data sheets. Contractor shall submit sufficient information of the Technical Proposal for Engine, Alternator, MV/LV cables, MV cable anti-fire paint, Switchgear, RMU, Circuit Breaker, Relays, Transformer, Fuel and Energy meters. and shall met and to comply with the latest SEC Distribution Materials Specification for altitude up to 1000 meters / above 1000 meters (above mean sea level) depending of site location rating at 55°C.
- Contractor to submit complete list of similar projects completed or underway with attached Contractor's clients completion certificate or currently performing from the list. Project listed not accompanied by client certificate will not be considered.

2.2.2 In the event that the contractor has obtained a contract. Contractor shall provide the following documents for complete implementation of the Project. The documents shall be prepared specific to this Project and arranged in the same sequence with the Table of Contents but not limited to:

- Time Scaled Bar Chart Schedule for complete implementation of the Project in each major activity events coming from site preparation, equipment/material mobilization, installation, testing and commissioning. The contractor shall be ready to generate electrical energy to SEC customers before the date specified in SERVICE ORDER.

- Compliance Statement stating that the Contractor shall comply with Scope of Work and Technical Specifications and adhere to all Terms and Conditions of the Perform Contract.
- Detailed drawings to include but not limited to [single line diagram to include connecting points, Earthing system & equipment details], [site power plant layout showing the information of air-flow to include generating sets, switchgears, tanks, transformers, office & workshop], [fuel system layout with fuel tanks, fuel flow meters for unloading & consumption].
- Additional information requirement to validate Contractor capabilities to undertake the work/project.
- Any subcontract for the performance of any portion of the WORK shall be procured only after Contractor has received written authorization from SEC. In the event of the Contractor solidarity or has an agreement with a local Contractor or Foreign, Contractor shall submit the same to SEC.

### 2.3. PREPARING SITE FOR ENERGIZING POWER:

After signed a contract, contractor shall be fully responsible for site preparation, crashed stone, leveling, installation and commissioning of (SEC units or its own units) and other required equipment's at site to energize in parallel or directly to the Network. Company will provide a suitable locations and connection points only, for the Contractor Equipment Generator sets.

Contractor shall provide all Required length of HV & LV new cable and terminations to transformers and connection points without any joints. And all HV and LV cable shall be with cable tray or ladder rack.

Contractor is responsible to providing kilo-watt hour meters reading in each contractor send out feeder & it shall be as per SEC specification. All the energy meter shall be electronically operated, calibrated & certified by combined committee. Energy meter reading shall be registered by SEC & contractor representative at the beginning of the contract, periodically (monthly) & at the end of contract.

For further details about meters, refer to below link:

<http://dist-cust.sec.se.com.sa/DistStandard/SDMS/index.htm>

Going To SEC – S/S

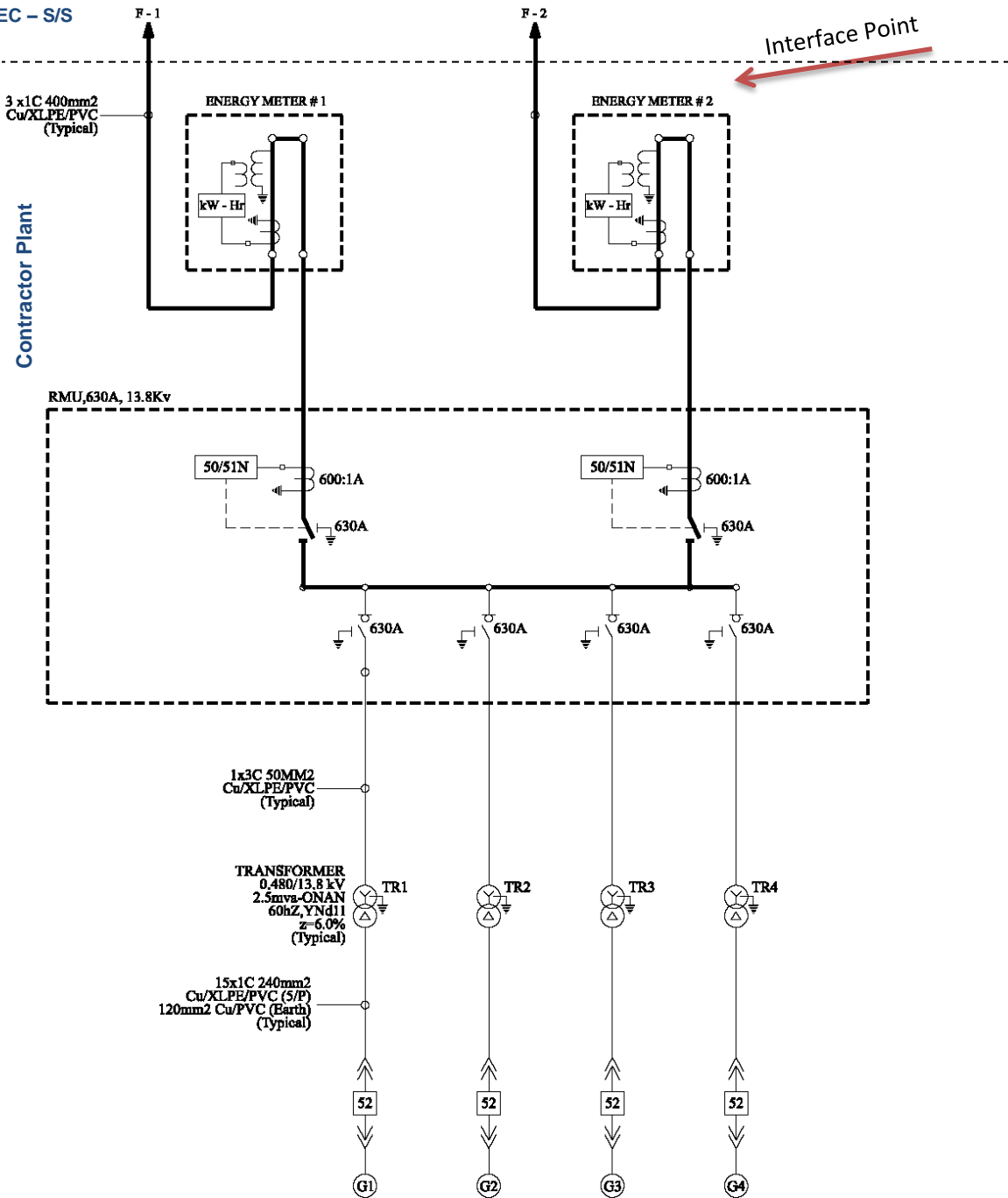


Figure 1 – example for SLD



### **3. CONTRACTOR PERFORMANCE EVALUATION:**

Evaluation of Contractor's performance in every Contract helps to determine the corrective actions that shall be taken in the event of Contractor failure in the performance of its contractual obligations. Isolated Generation Division in which the Contract is located is responsible for evaluating the performance and shall submit its evaluation to Contracting Department.

SEC has the right to deny or suspend any qualified Contractor in case of his evaluation score is becoming between (46-53%).

**Appendix I** (Contractor Performance report) showed the category of evaluation & the way of calculating contractors rate.

### **4. SITE HANDOVER:**

SEC responsible for providing a suitable location & interfacing points for the project. Contractor when directed by Service Order issued by SEC:

- Contractor shall if not yet done during the preparation of its Bid for Contract, before starting the work, conduct a site visit and to acknowledged that it has thoroughly investigated and satisfied itself as to all general and local conditions.
- Contractor shall be fully responsible for site preparation, crashed stone, leveling and to provide complete safety and security by providing adequate fencing, suitable lighting for all the sides of the generating plant with main gate and emergency exit.

**Appendix II** (Metering Records Module) module shall include the reading of energy, fuel meter and other requiring data. Metering Records Module shall be signed by both parties SEC & Contractor.

## **5. UNIFY OF ENERGY PURCHASE CONTRACTS**

This chapter focuses on procedures and guidelines related to the 'Energy Purchase Contract' Based on the team that was formed from the representatives of the Isolated Generation geographic sectors. It has been agreed on the formulation of a standardized Contract to purchase electric energy where it can be obtained from SEC website.

The link below is the unify contract for Energy Purchase Contract formulation which it shall be followed by all concerns Divisions or Groups:

[http://sec3/dist\\_cust/dist/HeaderNewn1.html](http://sec3/dist_cust/dist/HeaderNewn1.html)

## **6. FUEL PROCEDURES & CONTROL.**

Planning of amounts and expected consumption of fuel for intended year (12 months) on a monthly basis amounts by Isolated Generation Division or group per each sector, then sent to Distribution Planning Department (Isolated Generation Group).

Isolated Generation group review it and send it to **Energy Trading Venture (ETV)** - Fuel Sector.

All approval requiring & Communication with Saudi Aramco Company for approving the quota and reflecting it on the SAP system shall be obtained by (**Energy Trading Venture (ETV) - Fuel Sector**).

Coordination with ETV shall be through Distribution Planning Department – Isolated Generation Group

## 6.1 FUEL TRANSFER

- Isolated Generation in each geographic sectors will scheduling the amount of required and number of trucks shall be loaded to the site.
- Follow up with Contractor (Transporter) since they receipt the fuel from ARAMCO Bulk to Discharge (Loaded) to the site.
- If the haulage by Contractor, shall be responsible to collect and transport the fuel to specified SITE and shall follow SEC regulation and fuel transportation policy and general practice as per contract.

## 6.2 FUEL RECEIPT AT SITE.

- Fuel shall be received through meter and contractor shall follow all procedures of discharging according to contract specification.
- Registering the amount of fuel loaded in the plant.
- Confirming the amount of fuel by signed all parties at plants.

## 6.3 FOLLOW UP FUEL CONSUMPTION.

- Comparing Aramco waybills with received quantity at plants.(in case the losses in loaded quantity exceeding the allowable percentage as per contract, SEC shall apply the penalty as per contract .
- Consumed quantity shall be send it daily along with energy transmitted to grid for determined the SFC (Specific Fuel Consumption).
- Contractor if exceeding the amount of SFC, the monthly excess fuel consumption value shall be calculated on the basis of international market price to be deducted from the CONTRACTOR's monthly payments bill balance.

## **7 DAILY & MONTHLY REPORTS.**

### **7.1 RENTAL GENERATION PLANTS:**

- Daily Collecting & updating all operational data regarding the actual (DPGR /Daily Power Generation Report) data shall be received from contractor daily in order to send daily peak load to NG NCC.
- Prepared monthly report by concern area (Division or Group/DED) which is include all required data (attached Monthly Generation Report).
- Sent Monthly report to Distribution Planning Department - Isolated Generation Group.
- After final review, Isolated Generation Group sending the reports to Information and Regulator Indicators Department - Regulatory Affairs and Performance Monitoring Sector

### **7.2 OPERATION & MAINTENANCE OF SEC PORTABLE DIESEL UNITS:**

- Daily Collecting & updating all operational data regarding the actual (DPGR) report.
- Review & prepare the weekly report for the actual daily operation & submitted to direct supervisor.
- Prepare the monthly report for the actual operation cost including all activities required for operating SEC Portable Diesel Units.
- Inserting required data to General Monthly Report before sending it to Regulator Indicators Department - Regulatory Affairs and Performance Monitoring Sector.

## **8 APPENDIXES:**

**Appendix I** (Contractor Performance report)

**Appendix II** (Metering Records Module)